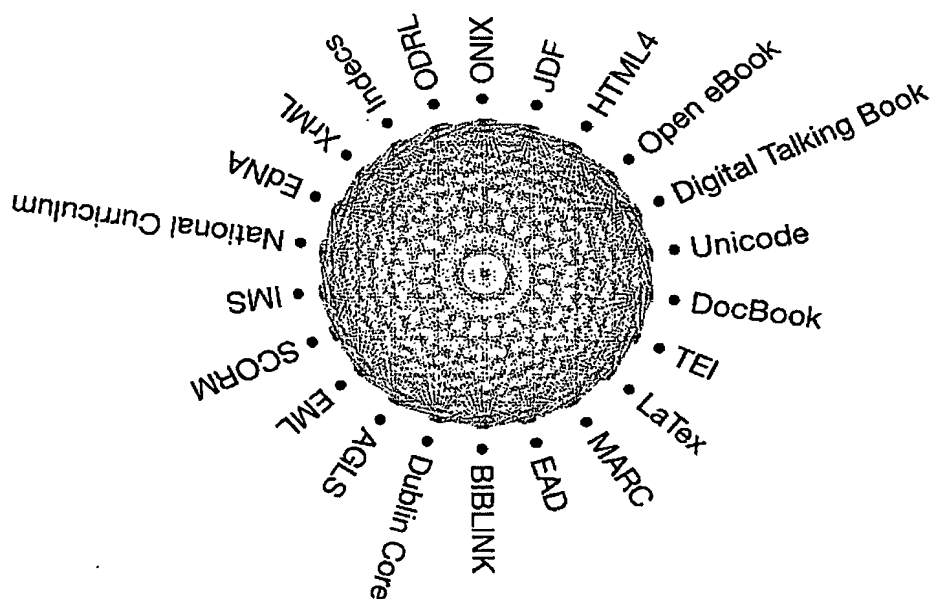FIG. 1: The Crosswalks Dilemma Illustrated—17 Ontologies Require 272 Crosswalks

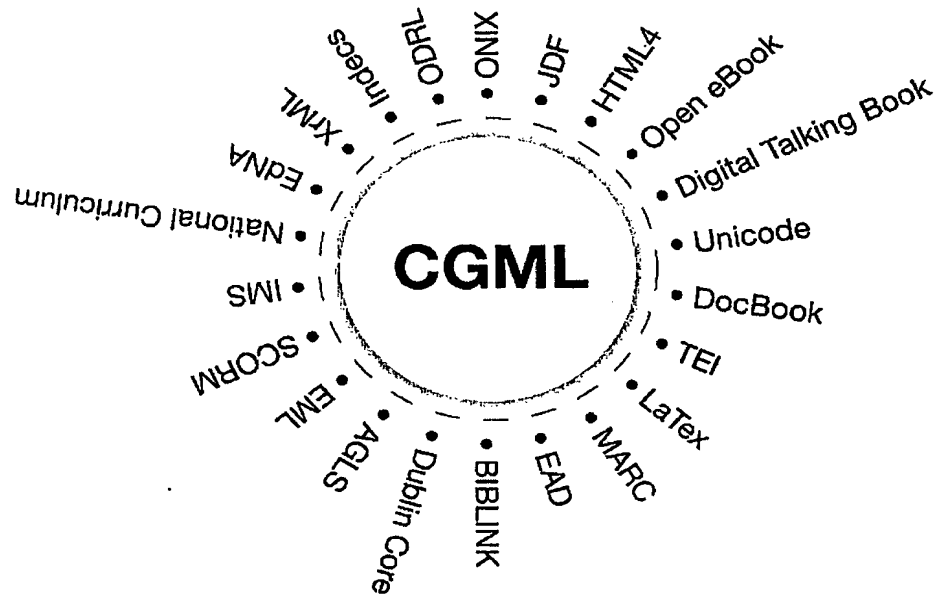FIG. 2: The Indefinitely Extensible Interlanguage Mechanism—Common Ground
Markup Language (CGML) as an example.

FIG. 3: Using the Interlanguage Mechanism, the Number of Mappings Equals the Number of Mapped Schemas (in this case n =17)

FIG. 4: The method of operation of the Interlanguage apparatus.

Source
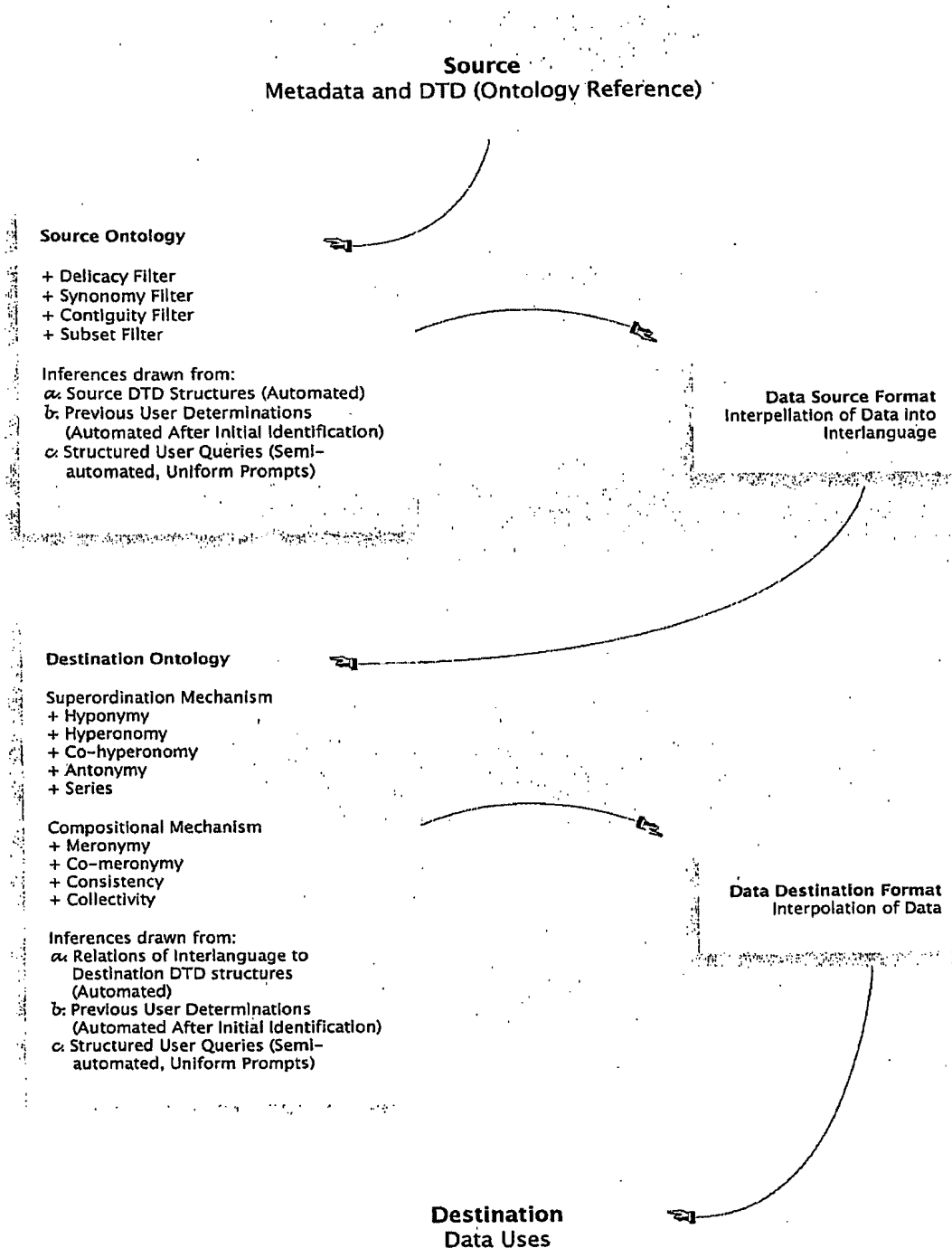Metadata and DTD (Ontology Reference)

Source Ontology

+ Delicacy Filter
+ Synonomy Filter
+ Contiguity Filter
+ Subset Filter

Inferences drawn from:
a. Source DTD Structures (Automated)
b. Previous User Determinations
    (Automated After Initial Identification)
c. Structured User Queries (Semi-
    automated, Uniform Prompts)

Data Source Format
Interpellation of Data into
Interlanguage

Destination Ontology

Superordination Mechanism
+ Hyponymy
+ Hyperonomy
+ Co-hyperonomy
+ Antonymy
+ Series

Compositional Mechanism
+ Meronymy
+ Co-meronymy
+ Consistency
+ Collectivity

Inferences drawn from:
a. Relations of Interlanguage to
    Destination DTD structures
    (Automated)
b. Previous User Determinations
    (Automated After Initial Identification)
c. Structured User Queries (Semi-
    automated, Uniform Prompts)

Data Destination Format
Interpolation of Data

Destination
Data Uses

FIG. 5: Ontology-Building Apparatus—CGLexicographer.

Properties	Field	View	Comments	Undo	Secur

ℙ Ontology Term at Zone → Intranet → CGOntology → CGCountryOfPublication

Structure Properties

Tag-Concept
> Country Of Publication

Dictionary Definition
> The country in which a <ref id="CGPublisher"/> or an <ref id="CGImprint"/> officially publishes a particular <ref id="CGProduct"/>.

Description

Children
> CG35mmSlideProjector
> CGAGLS
> CGASPContractsDelegation
> CGAbbreviatedTitle
> CGAbbreviation
> CGAbbreviationList
> CGAbridgedVersionOf

Schema Synonyms
> ONIX<CountryOfPublication>
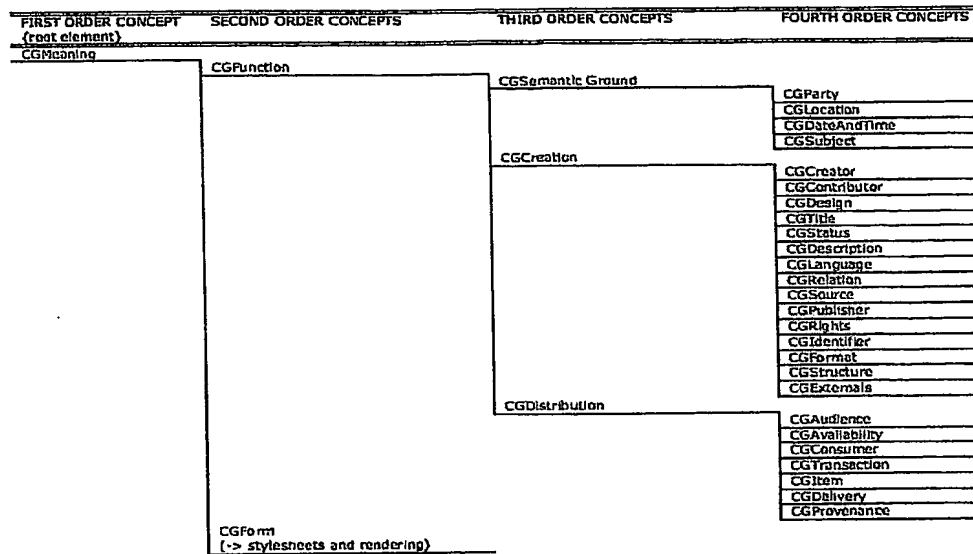> MARC<008,044$c>

Data Type

Is a field?   ☑

[Save Changes]

FIG. 6: Data entry area in CGPublisher (formerly named the Creator-to-Consumer (C-2-C) System. Using the invention, data can be exported into multiple ontologies.
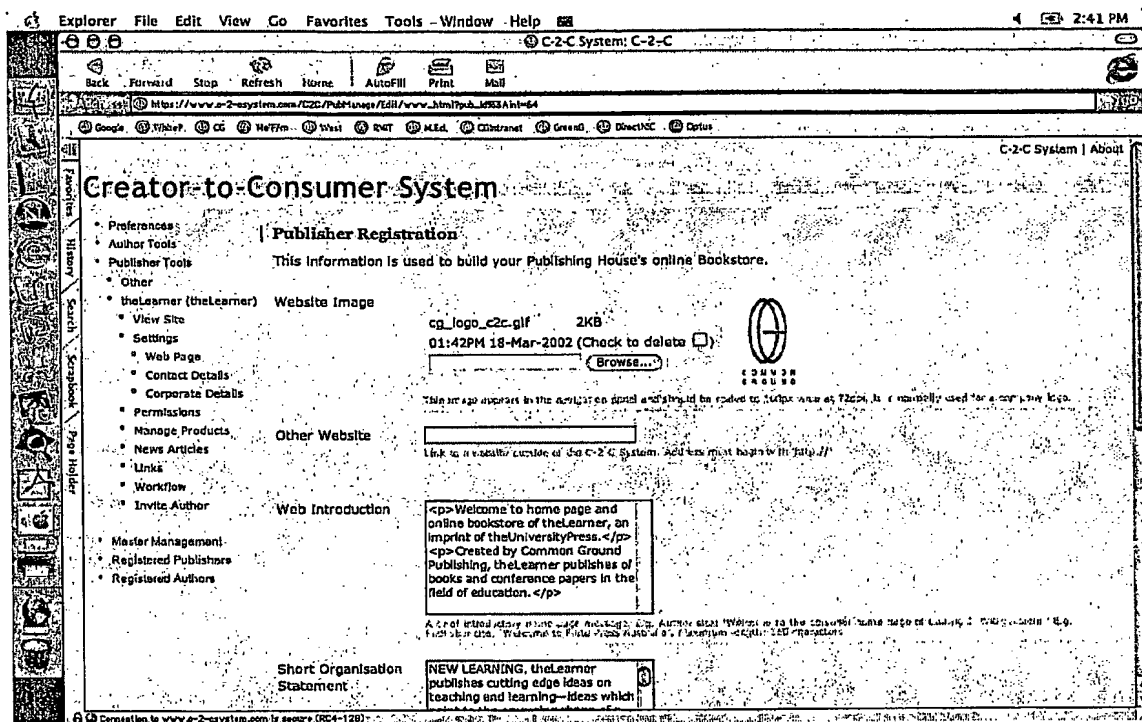
FIG. 7A: Example of Taxonomic Representation of Tags Relations in overlapping
Ontologies, as Generated by the Invention with First to Fourth Order Concepts

FIRST ORDER CONCEPT (root element)	SECOND ORDER CONCEPTS	THIRD ORDER CONCEPTS	FOURTH ORDER CONCEPTS
CGMeaning	CGFunction	CGSemantic Ground	CGParty
			CGLocation
			CGDateAndTime
			CGSubject
		CGCreation	CGCreator
			CGContributor
			CGDesign
			CGTitle
			CGStatus
			CGDescription
			CGLanguage
			CGRelation
			CGSource
			CGPublisher
			CGRights
			CGIdentifier
			CGFormat
			CGStructure
			CGExternals
		CGDistribution	CGAudience
			CGAvailability
			CGConsumer
			CGTransaction
			CGItem
			CGDelivery
			CGProvenance
	CGForm (-> stylesheets and rendering)		

FIG. 7B: Example of Taxonomic Representation of Tags Relations in overlapping Ontologies, as Generated by the Invention with Fourth to Sixth Order Concepts

FOURTH ORDER CONCEPTS	FIFTH ORDER CONCEPTS	SIXTH ORDER CONCEPTS
CGParty XrML<principal> IN<party> SCORM<centity>		
	CGPerson IMS<person> ONIX<Name> XrML<commonName> IN<person> EAD<persname> MARC<100/700 I1 = 1; I2 = # ; $a,600 I1 = 1; I2 = 4; $a >	
		CGNameFunction CGNameForPublication CGLegalName CGMaintName
		CGHonorific ONIX<TitlesBeforeNames> DB<honorific> MARC<100/700 I1 = 1; I2 = # ; $a; $c,600 I1 = 1; I2 = 4; $c >
		CGGivenNames ONIX<NamesBeforeKey> DB<firstName>,DB<othername> MARC<100/700 I1 = 1; I2 = # ; $a,600 I1 = 1; I2 = 4; $a > EML<Initials-prefix>
		CGSurnamePrefix ONIX <PrefixToKey>
		CGSurname ONIX<KeyNames> DB<surname> EAD<famname> MARC<100/700 I1 = 1; I2 = # ; $a; $b,600 I1 = 1; I2 = 4; $a>
		CGNameSuffix ONIX<SuffixToKey> DB<lineage>
	V {to CGOrganisation}	

FIGURE 8 shows a fragment of the Dublin Core to CGML Thesaurus.

CGML Tag-concept	DC Tag-concept	DC Values, Qualifers

CGTitle
CGPreviousTitle
	DC <Title>	Definition: A name given to the resource.
		Comments Typically, a Title will be a name by which the resource is formally known.
		Exemplary Qualifiers:
		   Label: Alternative
		   Definition: Any form of the title used as a substitute or alternative to the formal title of the resource.
		   Comment: This qualifier can include Title abbreviations as well as translations.
		MARC <245>

CGCreator	DC <Creator>	Definition: An entity primarily responsible for making the content of the resource. Comment: Examples of a Creator include a person, an organisation, or a service. Typically, the name of a Creator should be used to indicate the entity. MARC <100, 110, 111, 700, 710, 711,720>

CGSubject
 	
CGLibraryOfCongressSubjectHeads
 	
CGMedicalClassification
 	
CGDeweyClassification
 	
CGLibraryOfCongressClassitation
 	
CGUniversalDecimalClassification
	DC <Subject>	Definition: The topic of the content of the resource.
		Comment: Typically, a Subject will be expressed as keywords, keyphrases or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
		Exemplary Qualifiers:
		   Label: LCSH
		   Definition: Library of Congress Subject Headings MARC <600, 610, 611, 630, 650>
		   Label: MeSH
		   Definition: Medical Subject Headings See also: http://www.nlm.nih.gov/mesh/meshhome.html MARC <600, 610, 611, 630, 650>
		   Label: DDC
		   Definition: Dewey Decimal Classification See also: http://www.oclc.org/dewey/index.htm MARC <082>
		   Label: LCC
		   Definition: Library of Congress Classification See also: http://lcweb.loc.gov/catdir/cpso/lcco/lcco.htm MARC <050>
		   Label: UDC
		   Definition: Universal Decimal Classification See also: http://www.udcc.org/ MARC <080>
		MARC <600, 610, 611, 630, 650, 651>

FIGURE 9 shows a fragment of the CGML Dictionary of Authorship and Publishing specifying the concepts of <Creation> and <Creator>.

NOTATION Tag-Concept.	DEFINITION Dictionary definition based on parent concepts.	ANNOTATION Examples, related child concepts, data entry advice.
CGCreation	The process of realising Meanings which serve particular communicative or representational Functions.	Involves Creators and Contributors, developing a Design, which is expressed as a Work and is manifest in the form of a Product, Event or Service. A Design has a Title and may vary in Status (as it evolves, for instance, from Proposal, to Draft, to Edition). It may have a Description which summarises or overviews its content. In the case of text, it will be expressed in a particular Language. It may sit in a defined Relation to other Designs, Works or Products, and this may be specified as a Source. Distribution may be the responsibility of a Publisher, on the basis of an assignment or licensing of Rights. It may have an Identifier in the form of a unique string of numbers and/or letters such as an ISBN or a URL. It will have a Format and an inherent and characteristic Structure, and also possibly Externals which exist specifically in order to relate to the Work, for example by way of Review or Promotional Matter.
CGCreator	A Person who, or an Organisation which, plays a primary role in the conceptualisation of a creative Design and the execution of a Work. An essential Party to the process of Creation.	Includes the roles of Author, Editor, Scriptwriter, Lyricist, Composer, Visual Artist, Photographer and Conference Presenter.